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Forecasting the Value-at-Risk of Chinese stock market using the HARQ model and extreme value theory

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Abstract

Using intraday data of the CSI300 index, this paper discusses value-at-risk (VaR) forecasting of the Chinese stock market from the perspective of high-frequency volatility models. First, we measure the realized volatility (RV) with 5-minute high-frequency returns of the CSI300 index and then model it with the newly introduced heterogeneous autoregressive quarticity (HARQ) model, which can handle the time-varying coefficients of the HAR model. Second, we forecast the